

Patients with COPD, and other exercise-limiting respiratory disorders, may benefit from a short course of pulmonary rehabilitation to maximise their exercise capacity. Novel research in competitive cyclists has found that supplementation with beetroot juice enhanced their exercise capacity, whilst similar findings have been found in swimmers. As yet there has been no investigation of dietary nitrate supplementation in a chronic respiratory disease population.

We performed a small crossover trial to investigate the effect of beetroot supplementation upon performance in pulmonary rehabilitation patients. Ten patients were recruited and asked to drink 500ml of Beetroot juice, or Ribena juice, in the 24 hour period prior to commencing the class, on alternate weeks for six weeks. Outcomes measured include distance walked,  $\text{SaO}_2$ , and BORG score.

Beetroot juice supplementation was associated with a trend towards improved distance walked, with 7 of 10 patients showing improved mean distance walked during the weeks they consumed beetroot ( $p = 0.07$ ).

These findings, although preliminary and subject to further analysis, suggest there may be merit in larger trials investigating the use of dietary nitrate supplementation in patients with reduced exercise capacity as a result of chronic respiratory disorders.

## Irish Thoracic Society Poster Review and Discussion Saturday 8th November 2014

### 10. Tuberculosis and Other Infections

**Chair** J. Keane, St James's Hospital, Dublin

#### 10.1. The prevalence of Chronic Obstructive Pulmonary Disease in Patients with Culture-Confirmed Pulmonary Tuberculosis

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Tuberculosis (TB) and chronic obstructive pulmonary disease (COPD) are major causes of mortality and morbidity. These diseases have shared risk factors such as smoking, low socioeconomic status and genetic predisposition. The aim of the study was to examine (1) prevalence of COPD in culture confirmed pulmonary TB, (2) to assess if gender, age, tobacco use and alcohol have an impact on the diagnosis of TB.

We performed a retrospective descriptive study of patients referred to Mercy University Hospital, Cork from 2006 to 2012 who had culture-confirmed pulmonary tuberculosis.

One hundred and forty two subjects were studied. Of these, 70.4 % (100) were male and 29.6 % (42) female; 78.2 % (111) were Irish and 21.8 % (31) foreign-born. The mean age at diagnosis was 43 years for males and 29 years for females ( $P = 0.007$ ). Male subjects were more likely to be former or current smokers ( $P = 0.003$ ). Males with pulmonary TB consumed 35 % excess alcohol per week compared to females ( $P = 0.001$ ). 20 % of males had COPD compared to 0 % of females ( $P = 0.002$ ).

In this cohort, the prevalence of COPD among males with pulmonary TB was high and significantly higher than females. Further research is needed prospectively to examine the association of COPD and TB in the Irish population.

#### 10.2. A Liver-Friendly Regimen for Drug-Sensitive TB

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Guidelines recommend modification of drug-sensitive TB treatment in patients with ALT elevation more than three times the upper limit of normal (ULN) with hepatitis symptoms, or five times the ULN without symptoms [1]. We describe experience with the 'liver-friendly' regimen: Moxifloxacin, Amikacin and Ethambutol.

One patient with breast cancer was undergoing Vinorelbine (metabolised by CYP3A4) treatment when diagnosed with pulmonary TB. Isoniazid was discontinued after an idiosyncratic reaction and transaminases became deranged above five times the ULN on pyrazinamide. Radiographic resolution occurred after a 6 month 'liver-friendly' regimen.

One patient diagnosed with pulmonary TB had elevated transaminases—attributed to Voriconazole (subsequently stopped). After 10 days' treatment with Moxifloxacin, Amikacin and Ethambutol, improving LFTs permitted introduction of first-line therapy.

A patient with urinary tract TB developed a hypersensitivity reaction to Rifampicin and deranged LFTs on Pyrazinamide. Irritative urinary symptoms persisted after 1 month of the liver-friendly regimen. Worsening renal indices mandated discontinuation of amikacin and isoniazid was reintroduced. Rechallenge with escalated dosing of rifampicin was tolerated, with symptomatic resolution and negative urine TB cultures after 6 months' treatment. This case series highlights the need for systematic testing of alternative treatment regimens for patients at risk of TB drug-induced liver injury.

#### Reference:

1. Saukkonen JJ et al (2006) An official ATS statement: hepatotoxicity of antituberculosis therapy. *Am J Respir Crit Care Med*. 174(8):935–952

#### 10.3. An Audit of Tuberculosis (TB) Patients Encountered at a Tertiary Referral Centre over a 5 Year Period; Need for Proforma Data Collection?

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The purpose of this study was to identify aspects of improvement in clinical evaluation, investigation and care of Tuberculosis patients within our service at a tertiary referral centre.

A Retrospective chart analysis was carried out using a proforma data collection tool (Table 1).

#### Inclusion criteria;

- 5 year period between 01/2009 and 01/2014
- Treated for diagnosed TB
- Contact with the infectious disease team either as the primary team or consult.